

Staff Report

# **Bay Area to Central Valley High-Speed Train (HST) Partially Revised Final Program Environmental Impact Report (EIR)**

April 2012





**Staff Report  
for the  
Bay Area to Central Valley  
High-Speed Train (HST)  
Partially Revised Final Program  
Environmental Impact Report (EIR)**

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# STAFF REPORT FOR THE BAY AREA TO CENTRAL VALLEY HIGH-SPEED TRAIN PARTIALLY REVISED FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT

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AGENDA ITEM 4: Consideration of a Resolution (1) Certifying the Bay Area to Central Valley High Speed Train (HST) Partially Revised Final Program Environmental Impact Report (EIR), (2) Adopting California Environmental Quality Act (CEQA) Findings and a Statement of Overriding Considerations, (3) Approving a proposed network alternative, alignment alternatives, and station location options for the Bay Area to Central Valley, (4) Adopting a Mitigation Monitoring and Reporting Program (MMRP), (5) Directing staff to file a Notice of Determination (NOD); and (6) Directing staff regarding next steps for second-tier, project-level EIRs.

## 1 INTRODUCTION

The adoption of the proposed resolution No. HSRA 12-17 would complete the California High-Speed Rail Authority's (Authority) compliance with the November 2011 court rulings in the *Town of Atherton v. California High-Speed Rail Authority* litigation challenging the 2010 *Bay Area to Central Valley High-Speed Train (HST) Revised Final Program EIR*. Adoption of the resolution would also complete the programmatic phase of CEQA compliance by certifying the partially revised program-level EIR. Certification of the Partially Revised Final Program EIR would allow for the Authority Board to approve a network alternative for the Bay Area to Central Valley portion of the HST system, alignment alternatives, and station location options.

The Program EIR before the Authority has been underway since 2005. The Authority and the Federal Railroad Administration (FRA) initially completed the Bay Area to Central Valley Program EIR/EIS in May 2008, and in July of 2008 the Authority certified the document and approved the Pacheco Pass Network Alternative serving San Francisco via San Jose as its choice for the HST system to connect the Bay Area and Central Valley. Litigation ensued - *Town of Atherton v. California High-Speed Rail Authority* (Sacramento Superior Court No. 34-2008-8000022) (*Atherton 1*), and although the court found many aspects of the 2008 Final Program EIR fully complied with CEQA, the Authority was required to revise and recirculate certain portions of its 2008 Final Program EIR. These issues included:

- Adequacy of project description of the HST alignment between San Jose and Gilroy leading to inadequate discussion of impacts of Monterey Highway and impacts on Union Pacific Railroad's (UPRR) use of its right-of-way and spurs and freight operations.
- Recirculation after UPRR announced its unwillingness to allow use of its right-of-way.
- Land use impacts along the San Francisco Peninsula due to acquisition.
- 2008 CEQA finding on vibration impacts was not supported by substantial evidence.

The Authority completed its Revised Final Program EIR in August 2010, and in September 2010 it certified the document and again approved the Pacheco Pass Network Alternative serving San Francisco via San Jose as its choice for the HST system to connect the Bay Area and Central Valley. The *Atherton 1* litigation continued with a challenge to the Revised Final Program EIR, and a new CEQA case was also filed, *Town of Atherton v. California High-Speed Rail Authority* (Sacramento Superior Court No. 34-2010-8000679) (*Atherton 2*). The court considered the two cases challenging the 2010 Revised Program EIR together and on November 10, 2011, issued a ruling in each case. The Court again found many components of the 2010 Revised Final Program EIR complied with CEQA, but the court identified that the Authority failed to comply fully with CEQA in these areas:

- Noise, vibration, and construction impacts of shifting Monterey Highway.
- Traffic impacts on surrounding local roads due to narrowing Monterey Highway.
- Noise and vibration impacts of potentially moving freight tracks closer to adjacent land uses along the San Francisco Peninsula.
- Impacts of reduced access to surface streets from potential lane closure along the San Francisco Peninsula.

In addition, the Court concluded that the Authority's CEQA finding on traffic impacts associated with narrowing Monterey Highway was not supported by substantial evidence.

Following the November 2011 Court rulings, the Authority recirculated portions of its 2008 Final Program EIR and 2010 Revised Final Program EIR to address the issues identified by the court in a 2012 Partially Revised Draft Program EIR. This document included the items listed above and an analysis of new information and changed conditions since September 2010 including the Draft 2012 Business Plan and Revised 2012 Business Plan.

This Partially Revised Final Program EIR is a multi-volume document that includes the text of the Partially Revised Draft Program EIR, with some textual modifications in response to comments; comments on the Partially Revised Draft Program EIR; a list of persons, organizations and agencies commenting on the Partially Revised Draft Program EIR; responses to the significant environmental points raised in the comments; and the full text of the 2010 Revised Final Program EIR, including volumes 1 and 2 (text and responses to comments) and the 2008 Final Program EIR, including volumes 1 and 2 (text and appendices) and volume 3 (responses to comments).

The Authority Board is being asked to consider the Partially Revised Final Program EIR and the whole of the record before it, including public comments, submitted evidence, and supporting documentation, in making new decisions through proposed Resolution No. HSRA 12-17.

The documentation in the body of material that comprises the 2012 Partially Revised Final Program EIR is voluminous. This staff report is not intended to exhaustively address each issue identified or raised during the CEQA process since 2005. Rather, the purpose of this staff report is to provide an overview of the issues and to identify where a reader may find additional information in the text of the EIR.

## 2 DECISION BEFORE THE HIGH-SPEED RAIL AUTHORITY, PROGRAMMATIC NATURE OF THE DECISION, AND PROJECT PURPOSE & NEED/PROJECT OBJECTIVES

### 2.1 Proposed Decision

The “project” proposed by the Authority in the Bay Area to Central Valley Partially Revised Final Program EIR is the selection of a preferred route or “network alternative” between the Central Valley and the San Francisco Bay Area, including alignment alternatives and station locations. The route decision is a general one that selects a conceptually defined corridor for the HST, but not a precise footprint for improvements. A fundamental choice involves whether to access the Bay Area from the Central Valley over the Pacheco Pass, the Altamont Pass, or both passes.

**For more discussion of the proposed decision supported by the 2012 Partially Revised Final Program EIR and the programmatic nature of the decision and the EIR, and the project purpose and need/project objectives please refer to Chapter 1 of the 2008 Final Program EIR.**

### 2.2 Policy Level Nature of Proposed Decision and Tiering

The proposed HST system in the Bay Area to Central Valley corridor is subject to environmental review under CEQA, and the Authority is both the project sponsor and lead agency for CEQA compliance. The Authority determined that a first-tier, Program EIR was the appropriate CEQA document for the project at this conceptual stage of planning and decision-making, which includes selecting a preferred network alternative, preferred alignments and station location options.

Because of possible funding and regulatory action, the FRA is the lead federal agency, working with the Authority as the lead state agency, for the environmental review required by NEPA and related statutes. The FRA determined that preparation of a tier 1, program-level EIS for the proposed HST system in the Bay Area to Central Valley corridor was the appropriate NEPA document because of the conceptual stage of planning and decision-making. Decisions related to advancing and ultimately constructing the proposed HST system could constitute major federal actions requiring environmental review under NEPA for several federal agencies in addition to the FRA, including the Federal Highway Administration (FHWA) U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), Federal Aviation Administration (FAA), U.S. Fish and Wildlife Service (USFWS, and Federal Transit Administration (FTA). The EPA and USACE were the federal cooperating agencies for the Program EIR/EIS.

#### Network Alternative

Represents different ways to implement the HST system in the study region with combinations of HST Alignment Alternatives and station location options.

#### Alignment Alternative

General location for HST tracks, structures, and systems for the HST system between logical points within study corridors; they are generally configured along or adjacent to existing rail transportation facilities.

#### Station Location Option

General locations that represent the most likely HST stations based on current knowledge, consistent with the objective

No permits are being sought in this phase of environmental review. After selection of a network alternative, preferred alignments and station locations, the Authority and FRA will proceed with second-tier, project-specific EIR/EISs to assess in more detail the impacts of the preferred alignment and station locations options. Preparation of a program-level document followed by more detailed project-specific

documents that *tier*<sup>1</sup> off the program document offers a number of advantages. As described in Council on Environmental Quality (CEQ) regulations (40 CFR § 1508.28), FHWA Guidelines (23 CFR Part 771; 52 FR § 32646 [August 1987]), and the State CEQA Guidelines (14 CCR § 15168[b]), this approach offers the following advantages:

- More exhaustive consideration of impacts and alternatives than would be practical in an individual or project-specific EIR/EIS.
- Consideration of cumulative impacts that might be slighted in a case-by-case analysis.
- An opportunity for decision-makers to consider broad policy alternatives and program-level mitigation strategies at an early stage, when the flexibility to incorporate them is greater.
- Ability to avoid reconsideration of policy issues in subsequent documents.
- Early coordination with USACE and EPA to identify avoidance and minimization opportunities that are likely to yield or will lead to the selection of a least environmentally damaging practicable alternative (LEDPA) under Section 404 of the Clean Water Act (CWA).
- Less paperwork by encouraging the reuse of data through incorporation by reference in subsequent tiered documents.

Program or first-tier EIRs or EISs are deliberately focused on the “big picture” impacts of proposed decisions. A program EIR/EIS and a revised program EIR are informational documents intended to analyze and to disclose to the public and to decision-makers the environmental effects and benefits of a proposed program and its alternatives. Tiering assists the Authority and FRA in focusing on issues that are ripe for decision at each state of environmental review and in excluding from consideration issues that have already been decided or deferring those that are not ready for decision.

The Authority has intentionally tailored the scope of this environmental analysis to the conceptual nature of the proposed decisions, consistent with the concept of tiering in both NEPA and CEQA. As a programmatic document, the Partially Revised Program EIR (which includes the Program EIR/EIS and Revised Program EIR) does not analyze detailed, site-specific impacts of future projects to construct sections of the HST system, nor does it purport to be able to identify all of the detailed impacts of each alignment or station location option. Rather, it focuses on comprehensively identifying impacts, and describing key differences in potential impacts for each of the alternatives. More detailed analyses will be provided in future project-level environmental documents.

The Bay Area to Central Valley HST Partially Revised Final Program EIR is specifically designed to assist the Authority in making the fundamental choice of a preferred alignment within the broad corridor between and including the Altamont Pass and Pacheco Pass for the HST segment connecting the San Francisco Bay Area to the Central Valley. In selecting alignments and station locations, the Authority will not be selecting a precise footprint for improvements, but rather a conceptual corridor alignment subject to further refinement. Future tiered project-level environmental documents will assess the impacts of constructing and implementing individual HST projects for sections of the HST system and will examine specific project location alternatives for the selected corridor alignment and alternative station sites for the selected location options, utilizing design practices described in the Partially Revised Final Program EIR to avoid and minimize impacts to the greatest extent possible. These second-tier documents will concentrate on issues specific to the individual project being considered and site(s) chosen for the action before construction can be initiated.

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<sup>1</sup> *Tiering* refers to a multilevel approach where a first tier environmental document analyzes general matters and subsequent tiers analyze narrower projects/actions, referencing the more general document.

The environmental reviews and initial studies for site-specific, second-tier projects can incorporate by reference the discussions in the program environmental documents, and “concentrate on the environmental effects which (a) are capable of being mitigated, or (b) were not analyzed as significant effects on the environment in the prior environmental impact report.” (Public Resources Code section 21068.5.)

The 2012 Partially Revised Final Program EIR and 2010 Revised Program EIR were prepared under the supervision and direction of the Authority and the 2008 Program EIR/EIS was prepared under the supervision and direction of both the Authority and the FRA in conjunction with other federal agencies and with input from state and local agencies. It is intended that other federal, state, regional, and local agencies use the Partially Revised Final Program EIR to review the proposed program and develop expectations for the second-tier, project-level EIR/EISs that would follow the programmatic decisions.

## 2.3 Project Purpose and Need and Project Objectives

**PURPOSE:** The purpose of the Bay Area to Central Valley HST is to provide a reliable high-speed electrified train system that links the major Bay Area cities to the Central Valley, Sacramento, and Southern California, and that delivers predictable and consistent travel times. Further objectives are to provide interfaces between the HST system and major commercial airports, mass transit, and the highway network and to relieve capacity constraints of the existing transportation system in a manner sensitive to and protective of the Bay Area to Central Valley region's and California's unique natural resources.

This purpose is consistent with recent expressions of federal transportation policy, most notably the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) (Public L. 109-59; 119 Stat. 1144 [2005]), Transportation Equity Act for the 21st Century (TEA-21) (Pub. L. 105-178; 112 Stat. 107 [1998]), and its predecessor the Intermodal Surface Transportation Efficiency Act (ISTEA (Pub. L. 102-240; 105 Stat. 1914 [1991]), which encourage public transportation investment that increases national productivity and domestic and international competition while improving safety and social and environmental conditions. Specifically, these policies encourage investments that offer benefits such as those listed below.

- Link all major forms of transportation.
- Improve public transportation systems and services.
- Provide better access to seaports and airports.
- Enhance efficient operation of transportation facilities and service.

**NEED:** The need for the HST can be viewed from both a statewide and a regional perspective. The capacity of California's intercity transportation system is insufficient to meet existing and future demand, and the current and projected future congestion of the system will continue to result in deteriorating air quality, reduced reliability, and increased travel times. The system has not kept pace with the tremendous increase in population and tourism in the state. The interstate highway system, commercial airports, and conventional passenger rail system serving the intercity travel market are currently operating at or near capacity and will require large public investments for maintenance and expansion in order to meet existing demand and future growth over the next 20 years and beyond. Moreover, the ability to expand many major highways and key airports is uncertain; some needed expansions may be impractical or may be constrained by physical, political, and other factors. Simply stated, the need for improvements serving intercity travel within California relates to the following issues.

- Future growth in demand for intercity travel.
- Capacity constraints that will result in increasing congestion and travel delays.



- Unreliability of travel stemming from congestion and delays, weather conditions, accidents, and other factors that affect the quality of life and economic well-being of residents, businesses, and tourism in California.
- Increasing frequency of accidents on intercity highways and passenger rail lines in congested corridors of travel.
- Reduced mobility as a result of increasing demand on limited modal connections between major airports, transit systems, and passenger rail in the state.
- Poor and deteriorating air quality and pressure on natural resources as a result of expanded highway and airports.

The regional need is similar to the Statewide need.

- Regional growth demands within the nine-county Bay Area will put tremendous pressure on the existing transportation network, and increase the peak travel periods to encompass many more hours of the day. Additionally, growth in the region is taking place in the form of dispersed land uses that rely on individual vehicles for most trips. Without improved and more extensive transit systems leading to the main Central Valley cities and connecting them to each other, there will be little chance for these cities to move toward compact transit-oriented development.
- Regional congestion within the Bay Area is the second-worst traffic congestion in the country, after Los Angeles, and is expected to worsen over the next 25 years. The combination of significant population growth, dispersed development patterns (requiring a car for most trips), highway facilities that cannot keep pace with traffic demands, and large increases in interregional commuting, has worsened and will continue to worsen congestion levels and the associated environmental and economic impacts.
- Economic implications of congestion and inadequate transportation/transit access are already apparent. Congestion has a direct correlation with lost economic activity. When transportation access to urban and suburban centers becomes too difficult, employers are likely to move jobs to areas where land prices are lower and workers' commutes might be shorter. Without better passenger rail access, major job growth will continue to decentralize and move to places like the Central Valley.
- Without an expanded rail and transit network and more compact development, there may be greater adverse effects on the natural environment. More than 400,000 acres of land in the Bay Area are at risk from development. Promoting development in walkable communities near HST, intermodal, and other transit stations offers the best opportunity for taking development pressure off open space and farms. Demand for an additional 550,000 homes near transit in the Bay Area by 2030 is anticipated, but transit-oriented development functions well only when transit service is sufficiently frequent and reliable that residents can reduce the length and the number of car trips they take. An additional growing environmental concern is global climate change, and the transportation sector is responsible for about 40% of greenhouse gas emissions in California and up to 50% in the Bay Area. Because these emissions are directly proportional to the amount of fuel burned, offering effective and efficient transportation choices can result in reduced driving and reduced emissions.

**PROJECT OBJECTIVES:** The Authority's statutory mandate is to plan, build, and operate an HST system that is coordinated with the state's existing transportation network, particularly intercity rail and bus lines, commuter rail lines, urban rail transit lines, highways, and airports. The Authority has responded to this mandate by adopting the following objectives and policies for the proposed HST system.

- Provide intercity travel capacity to supplement critically over-used interstate highways and commercial airports.



- Meet future intercity travel demand that will be unmet by present transportation systems and increase capacity for intercity mobility.
- Maximize intermodal transportation opportunities by locating stations to connect with local transit, airports, and highways.
- Improve the intercity travel experience for Californians by providing comfortable, safe, frequent, and reliable high-speed travel.
- Provide a sustainable reduction in travel time between major urban centers.
- Increase the efficiency of the intercity transportation system.
- Preserve environmental quality and protect California's sensitive environmental resources by reducing emissions and vehicle kilometers/vehicle miles traveled for intercity trips.
- Consult with resource and regulatory agencies during the tier 1 environmental review and use all available information for identifying the alternative that is most likely to yield the least damaging practicable alternative by avoiding sensitive natural resources (e.g., wetlands, habitat areas, conservation areas) where feasible.
- Maximize the use of existing transportation corridors and rights-of-way, to the extent feasible.
- Develop a practical and economically viable transportation system that can be implemented in phases by 2020 and generate revenues in excess of operations and maintenance costs.

### **3 ELEMENTS OF THE DECISION PROCESS**

#### **3.1 Certification and Compliance with CEQA**

At the time of its decision on the Partially Revised Final Program EIR, CEQA requires the Authority, as the lead agency, to take various actions.

##### **3.1.1 CEQA Certification**

Before approving a network alternative, alignment alternatives, and station location options, the Authority must certify that (1) the Partially Revised Final Program EIR has been prepared in compliance with CEQA; (2) the Partially Revised Final Program EIR has been presented to, and reviewed and considered by, the Authority; and (3) the Partially Revised Final Program EIR reflects the Authority's independent judgment and analysis as the lead agency. (Pub. Resources Code § 21100; CEQA Guidelines § 15090.)

##### **3.1.2 Adoption of Findings**

If an EIR identifies one or more significant effects on the environment that would occur as a result of the proposed program, the Authority must make one of three findings with respect to each significant effect (Public Resources Code § 21081(a); CEQA Guidelines § 15091):

- Changes have been made to the project, or incorporated into the project, which mitigate or avoid the identified significant effects on the environment.
- Those changes or alterations (i.e., mitigation measures) are within the responsibility and jurisdiction of another public agency, and have been or can and should be adopted by that other agency.
- The agency finds that the mitigation measures or alternatives are infeasible for specific "economic, legal, social, technological, or other considerations."

### **3.1.3 Overriding Considerations**

If significant effects cannot be mitigated to a less-than-significant level, the Authority must also adopt findings indicating the specific overriding economic, legal, social, technological, or other benefits of the project which are viewed as outweighing each of the significant adverse effects. (Pub. Resources Code § 21081(b).)

### **3.1.4 Adoption of Project to be Carried Forward**

If the Authority's certifies the Partially Revised Final Program EIR for compliance with CEQA, it then has discretion to approve a network alternative to be carried forward into the project-level review, including alignment alternatives and station location options.

### **3.1.5 Adoption of Mitigation Monitoring Program Plan Report**

Section 21081.6 of CEQA requires public agencies to adopt a reporting or monitoring program whenever a project or program is approved that includes mitigation measures identified in an environmental document.

### **3.1.6 Filing of Notice of Determination**

Finally, after (i) certifying the Partially Revised Final Program EIR, (ii) adopting findings, as described above, (iii) incorporating as conditions of approval feasible mitigation measures to reduce significant adverse environmental impacts, and (iv) adopting a statement of overriding considerations for any expected remaining significant adverse environmental effects, and if an approval decision is made, the Authority would direct the filing of a Notice of Determination with the Governor's Office of Planning and Research. (CEQA Guidelines § 15094.)

## **3.2 FRA—Record of Decision and Compliance with NEPA**

At the time of its decision, NEPA requires the FRA to prepare a "concise public record of decision." (40 Code of Federal Regulations (CFR) § 1505.2.) The FRA issued its Record of Decision (ROD) for the 2008 Final Program EIS on December 2, 2008. The ROD issued by the FRA is available at <http://www.fra.dot.gov/rpd/freight/1613.shtml>.

## **4 RECOMMENDED ACTION**

Staff recommends that the Authority adopt the attached Resolution No. HSRA 12-17, which would certify the Partially Revised Final Program EIR as being in compliance with CEQA, adopt CEQA Findings of Fact and a Statement of Overriding Considerations, approve the Pacheco Pass Network Alternative serving San Francisco via San Jose, alignment alternatives and station location options, and adopt a Mitigation Monitoring and Reporting Program.

## 5 SUMMARY OF PROGRAM EIR PROCESS AND RANGE OF ALTERNATIVES

This section briefly describes the Bay Area to Central Valley HST environmental review under the CEQA and National Environmental Policy Act of 1969 (NEPA) certification process.

### 5.1 Summary of Program EIR Process and Public Participation

#### 5.1.1 Summary of the 2005 Final Statewide Program EIR/EIS

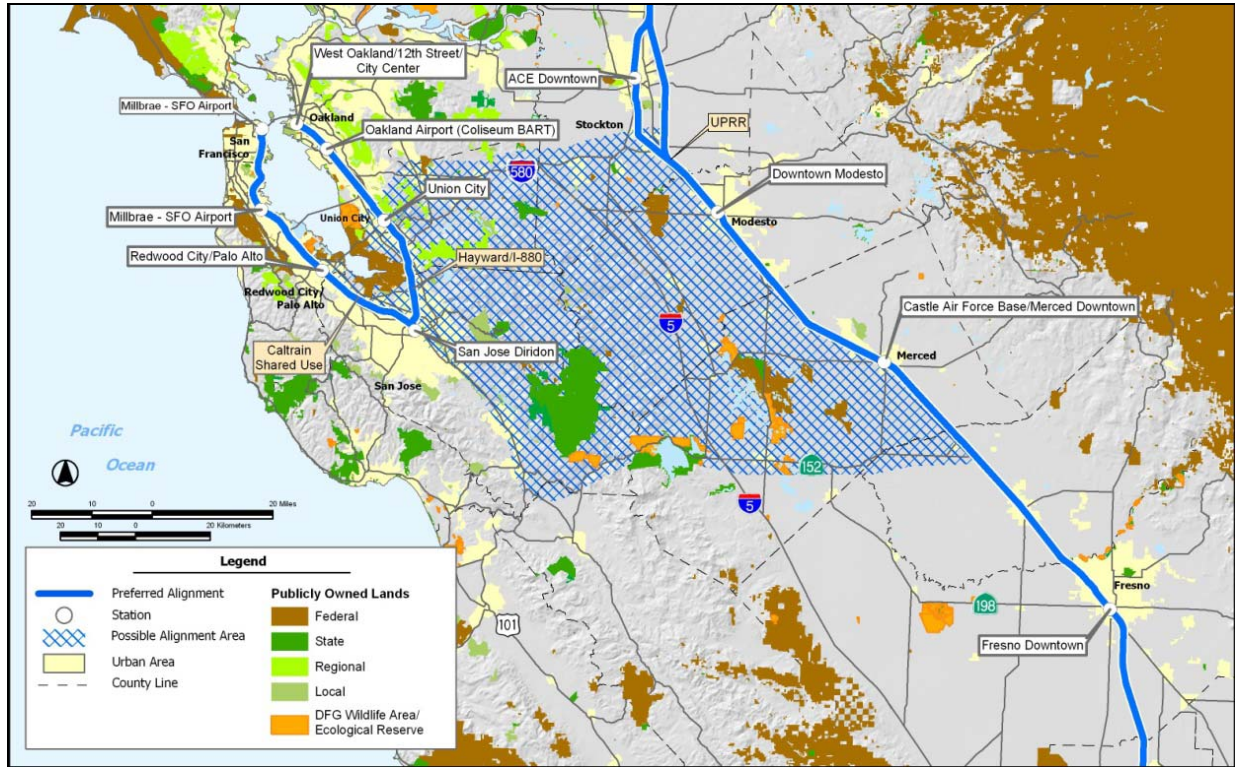
The Authority and FRA completed a Statewide Program EIR/EIS in November 2005 as the first phase of a tiered environmental review process for the proposed HST system. The Authority resolution (No. 05-01) approved the HST system as the program alternative. The HST system would use electrically propelled steel-wheel-on-steel-rail trains capable of maximum operating speeds of 220 mph on dedicated, fully grade-separated lines. In addition, the HST system would use design practices to avoid, minimize, and mitigate potential impacts. The Authority and FRA also identified preferred HST alignments and station locations for future study in second-tier environmental documents for all areas except the Bay Area to the Central Valley.

However, an area of controversy that was raised on the 2004 Draft Statewide Program EIR/EIS was the removal of the Altamont Pass corridor from further consideration during screening in the Bay Area to Merced region. The key difference between this corridor and those carried forward for analysis in the Program EIR/EIS is how they would serve Bay Area populations, and particularly how the HST system would operate in this region. Many comments were received urging further evaluation of the Altamont Pass as a potential alignment option. Federal agency comments and others noted the limitations of available environmental resource information regarding the Diablo Range mountain crossing.

As part of the selection of the HST Alternative in 2005, the Authority and FRA defined a broad corridor between the Bay Area and Central Valley for additional review at the program level and directed staff to "prepare a separate program-level EIR to identify a preferred alignment within this broad corridor." This study region is generally bounded by (and includes) the Pacheco Pass (State Route 152 [SR 152]) to the south, the Altamont Pass (Interstate 580 [I-580]) to the north, the BNSF corridor to the east, and the Caltrain corridor to the west<sup>2</sup> (Figure 1). For this area, future study was identified to consider: (1) how and where the HST alignment from the Bay Area would connect with the HST alignment in the Central Valley; (2) how and where the HST alignment would enter the Bay Area and would connect to Bay Area termini; and (3) the location of stations within these segments. As a result of agency and public comments received on the Draft Statewide Program EIR/EIS, it was determined that the Altamont Pass along with the Pacheco Pass be included as part of the broad corridor separate program-level EIR.

**For more discussion of the alternatives evaluated in the 2012 Partially Revised Final Program EIR, please refer to Chapter 2 of the 2008 Final Program EIR, Chapter 12 of the 2010 Partially Revised Final Program EIR, and Chapter 10 (Standard Response 1) of the 2012 Partially Revised Final Program EIR.**

2 Highway route numbers are provided only as a convenient reference for the reader, not as a limitation on the corridor to be considered.



**Figure 1. Bay Area to Central Valley Study Region**

### 5.1.2 Summary of the 2007 and 2008 Bay Area to Central Valley Program EIR/EIS Process

Following certification of the statewide program EIR/EIS, the Authority and FRA initiated the program level Bay Area to Central Valley environmental review process in compliance with NEPA (42 U.S.C. § 4321 *et seq.*) and CEQA (Cal. Pub. Resources Code § 21000 *et seq.*). As the next phase of the tiered environmental review, the Program EIR/EIS further examines the Bay Area to Central Valley region. The Authority was the project sponsor and the lead agency for purposes of the state CEQA requirements (EIR). The FRA was the federal lead agency for compliance under NEPA (EIS).

The Notice of Preparation (NOP) for the Bay Area to Central Valley HST Program EIR was released November 14, 2005. The Notice of Intent (NOI) was published in the Federal Register on November 28, 2005. The scoping process included 12 officially noticed agency and public scoping meetings in late November and early December 2005. Recognizing the important relationship of HST alignments and stations to a regional rail system in the northern California area, the HST scoping meetings were held in conjunction with public meetings on the San Francisco Bay Area Regional Rail Plan initiation meetings. The Authority also held numerous meetings with and invited input from regional and local agencies in the region potentially affected by the proposed HST system. Meetings of the Authority governing board were also a forum for providing information about the environmental process. These meetings were held in major cities in the project area to provide a convenient opportunity for regional and local participation and input.

Comments received during this scoping process assisted the Authority and FRA in their review and evaluation of possible HST Alignment Alternatives and station location options and identification of those to be carried forward for environmental evaluation in the Program EIR.



The 2007 Draft Program EIR was released for public review and comment on July 16, 2007, and noticed in the *Federal Register* on July 20, 2007. The initial public comment period was scheduled to end September 28, 2007, but due to public requests, it was extended to October 26, 2007.

The public was informed of the 2007 Draft Program EIR release through distribution of an announcement of the document's availability to the project mailing list, including federal, state, and local elected officials; federal, state, and local agency representatives; chambers of commerce; environmental and transportation organizations; special interest groups; media; private entities; and members of the public. The Program EIR was also made available for viewing and downloading at the Authority's web site, [www.cahighspeedrail.ca.gov](http://www.cahighspeedrail.ca.gov) and was announced through display ads distributed in local newspapers. The Authority held eight public hearings throughout the Bay Area and northern California on the 2007 Draft Program EIR. Comments were received at the public hearings and through letters, faxes, and the Authority's website. More than 400 people provided over 1,300 comments from July 20, 2007, to October 26, 2007, during the circulation period.

**All comments submitted to the Authority during the 2007 review period are addressed and responded to in the 2008 Final Program EIR, Volume 3.**

The 2008 Final Program EIR evaluated the potential impacts of a full range of alignment alternatives and station location options in the study region and defined general mitigation strategies to address potentially significant adverse impacts. The 2008 Final Program EIR was made available to the public and public agencies in May 2008. In June 2008, the Authority issued an Addendum/Errata containing corrections to the 2008 Final Program EIR, that was included in the 2008 Final Program EIR.

#### A. AREAS OF CONTROVERSY

In considering a choice of alignment alternatives and station location options to form an HST network in the study region, the Authority took into account potential impacts on natural resources, cost, travel conditions, effects on travel time and ridership, and public and agency input. Other considerations include possible modifications to alignment alternatives by using more costly designs and construction techniques (e.g., tunnels and elevated guideways), or moving the location of alignments for functional or cost reasons or to avoid or minimize impacts on sensitive resources. The following were the identified principal areas of controversy in 2008:

- Selection of an HST network with appropriate service to the Bay Area, including choice of mountain crossing, choice of alignments, location of stations, and number of stations directly served (refer to Chapters 2, 7, and 8 of the 2008 Final Program EIR).
- Impacts on biological resources and wildlife areas, particularly related to the San Francisco Bay Crossings and the Grassland Ecological Area (GEA) (refer to Section 3.15 and Chapter 8 of the 2008 Final Program EIR).
- Impacts on urban areas, mostly from noise and visual effects, community effects, and property impacts related to right-of-way acquisition (refer to Sections 3.4, 3.7, and 3.9 in the 2008 Final Program EIR).
- Growth (refer to Chapter 5 of the 2008 Final Program EIR)

In addition, at the close of this process in May 2008, Union Pacific Railroad (UPRR) notified the Authority in writing that it refused to allow any use of its rights of way for the HST.

The 2008 Final Program EIR evaluated alignment alternatives and station location options comprising 21 representative networks for connecting the HST system in the Bay Area to the Central Valley study region. The alignment alternatives identified general locations for HST tracks, structures, and systems for the HST system between logical points within the Bay Area to Central Valley study region. To minimize potential environmental impacts from the HST system, the Authority's objective

has been to maximize the use of existing transportation corridors and rights-of-way for the HST system.

Consistent with this objective, extensive portions of the alignment alternatives were described and analyzed as if they were placed within or adjacent to existing rail or highway rights-of-way, rather than on new alignment.

Evaluations for the previous Statewide Program EIR and for the 2008 Final Program EIR have consistently shown a potential for fewer significant environmental impacts along existing transportation facilities than on new alignments through both developed and undeveloped areas.

**The 21 representative network alternatives are discussed below in Chapter 5 of this staff report, and illustrated in Figures 5a, 5b, and 5c .**

### 5.1.3 Summary of the 2010 Bay Area to Central Valley HST Revised Program EIR Process

In July 2008, the Authority certified the 2008 Final Program EIR for its compliance with the CEQA. The Authority then selected the Pacheco Pass Network Alternative Serving San Francisco via San Jose, preferred alignments, and preferred station locations for further study in project EIRs. The Authority also adopted a mitigation monitoring and reporting program and a statement of overriding considerations. The Authority took these actions in a duly noticed public meeting by adoption of Authority Resolution No. 08-01.

On August 8, 2008, the Town of Atherton, the Planning and Conservation League, the City of Menlo Park, the Transportation Solutions Defense and Education Fund, the California Rail Foundation, and the Bay Rail Alliance filed the *Atherton 1* lawsuit in the Superior Court for Sacramento County challenging the Authority's actions as being in violation of CEQA. Following extensive briefing in the case and a hearing on May 29, 2009, Judge Michael Kenny issued a ruling on August 26, 2009. A copy of the ruling is included on the Authority website ([http://www.cahighspeedrail.ca.gov/ba\\_cv\\_program\\_eir.aspx](http://www.cahighspeedrail.ca.gov/ba_cv_program_eir.aspx)). In that ruling, the Court concluded that the Authority's 2008 Final Program EIR failed to comply with CEQA in the following respects:

- **ADEQUACY OF PROJECT DESCRIPTION:** "The Court concludes that the description of the alignment of HSR tracks between San Jose and Gilroy was inadequate even for a programmatic EIR. The lack of specificity in turn results in an inadequate discussion of the impacts of the Pacheco alignment on surrounding businesses and residences which may be displaced, construction impacts on the Monterey Highway, and impacts on Union Pacific's use of its right-of-way and spurs and consequently its freight operations." (Ruling, p. 6.)

**RECIRCULATION AFTER UPRR ANNOUNCED ITS UNWILLINGNESS TO ALLOW USE OF ITS RIGHT-OF-WAY:** "[T]his Court concludes that various drawings, maps and photographs within the administrative record strongly indicate that [the Pacheco alignment is dependent upon the use of Union Pacific's right-of-way.] The record further indicates that if the Union Pacific right-of-way is not available, there may not be sufficient space for the right-of-way needed for the HST without either impacting the Monterey Highway or without the acquisition of additional amounts of residential and commercial property. These are significant impacts which were sufficient to trigger recirculation of the FPEIR." (Ruling, pp. 19-20.)

- **LAND USE IMPACTS ALONG SAN FRANCISCO PENINSULA:** "As discussed elsewhere in this Court's ruling, Union Pacific has stated it is unwilling to allow its right-of-way to be used for the project. The need for acquiring additional property is a related issue that will be required to be analyzed in connection with further analysis of the impact of Union Pacific's denial of use of its right-of-way." (Ruling, pp. 15-16.)

The Court also held the Authority's CEQA finding on vibration impacts was not supported by substantial evidence. (Ruling, p. 14.) The Court rejected all other challenges to the content of the 2008 Final Program EIR raised in the litigation.

To comply with the court requirements, the Authority rescinded its 2008 decisions and circulated a March 2010 Revised Draft Program EIR. A major focus of this document was the relationship of HST alignments to Union Pacific Railroad rights of way. (See Figure 2 below.) The Authority held two Public Meetings in San Jose on April 7, 2010 to receive comments from the public and public agencies on the Revised Draft Program EIR. Hundreds of people attended the two public meetings and more than fifty individuals offered verbal comments. Written comments on the Revised Draft Program EIR were sent to the Authority in the form of letters and faxes, and were also sent through the Authority's website. More than 540 people provided over 3,750 comments during the circulation period (either through written letters or oral testimony). The verbal and written comments received during the public comment period addressed the broad spectrum of issues related to an EIR. Some comments addressed the revised and new materials in the 2010 Revised Draft Program EIR. Many other comments addressed the content of the May 2008 Final Program EIR. Most of the commenters expressed their views on the HST project and the selection of a network alternative to connect the Bay Area to the Central Valley.

**All comments submitted to the Authority during the 2010 review period are addressed and responded to in the 2010 Revised Final Program EIR, Volume 2.**

#### A. AREAS OF CONTROVERSY

A number of areas of controversy were identified as a result of the 2010 comment process for the Revised Draft Program EIR and were considered in developing the Revised Final Program EIR:

- Adequacy of the level of detail in the environmental analysis for programmatic decision-making process. Refer to Chapter 12, Standard Responses 2 and 3, of the 2010 Revised Final Program EIR.
- Selection of a network alternative for connecting the Bay Area to the Central Valley, including choice of mountain crossing, choice of alignments, location of stations, and number of stations directly served. Refer to Chapters 7 and 12 (Standard Response 10) of the 2010 Revised Final Program EIR.
- Land Use and community impacts along the Pacheco Pass Network Alternative serving San Francisco via San Jose, including concerns about noise, aesthetic impacts, and safety. Refer to Chapters 2, 3, and 12 (Standard Responses 5, 6, and 7) of the 2010 Revised Final Program EIR.
- The interface between HST and UPRR freight operations (Figure 2), including whether UPRR's unwillingness to allow use of its rights-of-way for HST render certain alignment alternatives infeasible, safety considerations, and the role of freight operations in the state and national economy. Refer to Chapters 2, 3, 4, and 12 (Standard Response 9) of the 2010 Revised Final Program EIR.
- Ridership Forecasts, including concerns about the validity of the ridership forecasts used in the 2008 Final Program EIR and the underlying model used to produce the forecasts. Refer to Chapter 12, Standard Response 4, of the 2010 Revised Final Program EIR.

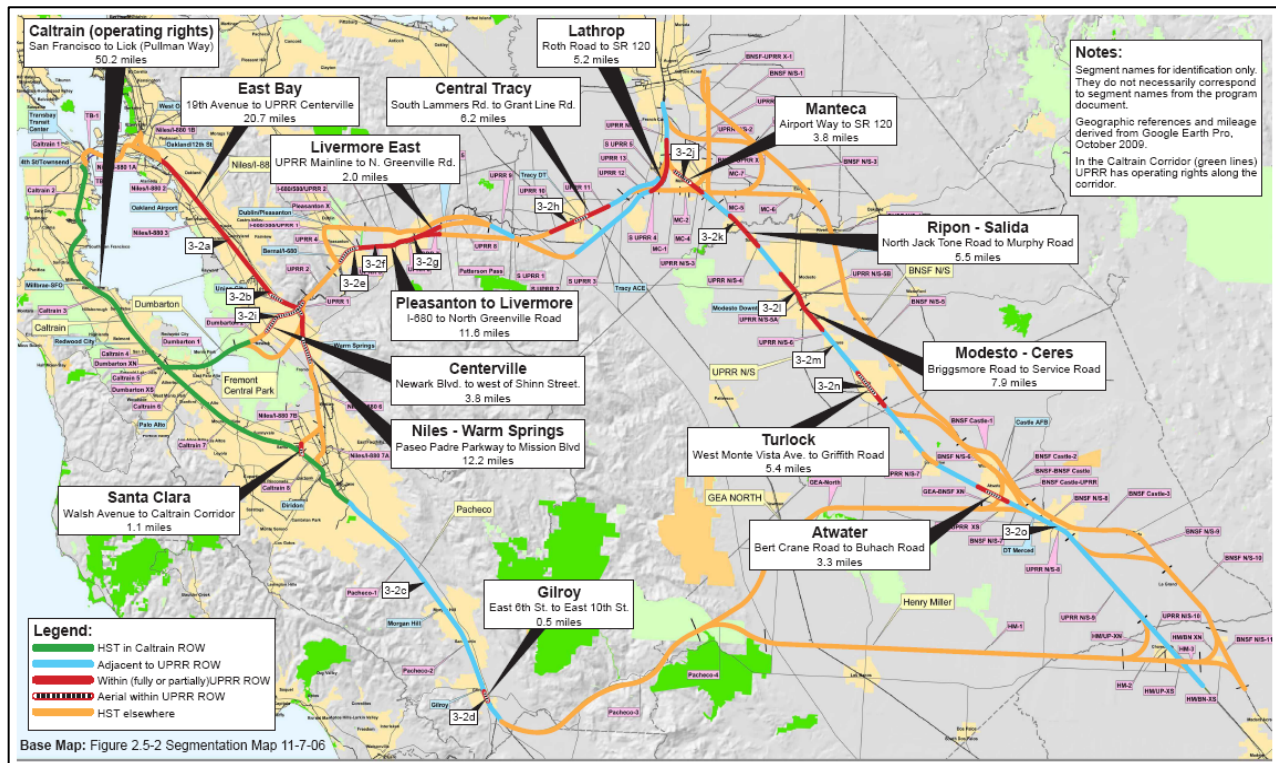


Figure 2. UPRR Interface Locations

#### 5.1.4 Summary of the 2012 Bay Area to Central Valley HST Partially Revised Program EIR Process

In September 2010, the Authority certified the 2010 Revised Final Program EIR for its compliance with the CEQA. The Authority then selected the Pacheco Pass Network Alternative Serving San Francisco via San Jose, preferred alignments, and preferred station locations for further study in project EIRs. The Authority also adopted a mitigation monitoring and reporting program and a statement of overriding considerations. The Authority took these actions in a duly noticed public meeting by adoption of Authority Resolution No. 11-11.

Additional litigation ensued between the fall of 2010 and the fall of 2011, leading to two court rulings in November 2011 that again upheld many areas of the Program EIR, but continued to find some deficiencies. Copies of the rulings are included on the Authority website ([http://www.cahighspeedrail.ca.gov/ba\\_cv\\_program\\_eir.aspx](http://www.cahighspeedrail.ca.gov/ba_cv_program_eir.aspx)). This document addressed those areas that the court identified as needing additional work to comply with CEQA, including:

- A revised discussion of noise and vibration effects of shifting a stretch of Monterey Highway between San Jose and Gilroy and the potential for moving freight rail activity closer to adjacent land uses in some locations along the San Francisco Peninsula and South of San Jose between Tamien and Lick, potentially placing freight tracks closer to adjacent land uses.
- A revised discussion of traffic and circulation impacts on surrounding local streets resulting from the lane reduction on a stretch of Monterey Highway between San Jose and Gilroy and resulting from lane closures on adjacent parallel streets in some locations along the San Francisco Peninsula. Additional analysis is also provided for the potential loss of traffic lanes along the Oakland to San Jose corridor in the City of Hayward.



- A revised construction impacts analysis to clarify the construction impacts anticipated with the adjustments to Monterey Highway and movement of tracks in an active rail corridor.
- An assessment of new information and changed conditions since the Authority's September 2, 2010 Revised Final Program EIR decisions, including the Draft 2012 Business Plan and Revised 2012 Business Plan (as part of the Partially Revised Final Program EIR).
- And a discussion of how the revised and new information affects the prior staff recommendation of the Pacheco Pass Network Alternative serving San Francisco via San Jose as the preferred alternative.

The analysis led to several conclusions.

- Consistent with the 2008 Final Program EIR, the project would result in significant noise and vibration impacts. Noise impacts associated with the shift of Monterey Highway would result in a separate significant impact.
- Traffic impacts of potential lane loss on the San Francisco Peninsula and in the City of Hayward and on Monterey Highway and surrounding roadways would result in significant impacts.
- Construction impacts from adjustments to Monterey Highway and movement of tracks in an active rail corridor would result in significant impacts.
- Traffic impacts at interim terminus stations under a phased HST implementation for the Altamont Pass or Pacheco Pass network alternatives would be significant.
- Impacts to connecting commuter rail service from HST riders boarding at interim terminus stations under a phased HST implementation for the Altamont Pass or Pacheco Pass network alternatives would be significant.
- Impacts from grade separations across all alignment and network alternatives would be significant.

The Authority circulated the January 2012 Partially Revised Draft Program EIR for 45 days from January 6, 2012 through February 21, 2012. Notice of Availability/Public Meeting regarding the availability and the circulation of the Partially Revised Draft Program EIR was provided pursuant to CEQA including posting with 9 county clerks and published in 11 newspapers throughout the Bay Area and Central Valley. The document was also made available to the public through the Authority website on January 5, 2012. In accordance with CEQA, a Notice of Completion was filed with the State Clearinghouse on January 5, 2012 initiating the required 45-day public comment period. The Partially Revised Draft Program EIR and a notice were also made available to 16 libraries for public viewing. The Notice of Availability/Public Meeting was also distributed to over 24,000 recipients included on program and project-level mailing lists. The Partially Revised Draft Program EIR was distributed to over 360 Federal and State agencies, elected officials, Native American groups, and prior commenters. Refer to Chapter 1 of the 2012 Partially Revised Final Program EIR.

The Authority held a Public Meeting in San Jose on February 9, 2012 to receive comments from the public and public agencies on the Partially Revised Draft Program EIR. Less than 10 people attended the public meeting and six offered verbal comments. Written comments on the Partially Revised Draft Program EIR were sent to the Authority in the form of letters, electronic mail, and submissions through the Authority's website. Comments from the public meeting were transcribed as well. A total of 56 people provided over 430 comments during the circulation period (either through written letters or oral testimony). The verbal and written comments received during the public comment period addressed the broad spectrum of issues related to an EIR. Some comments

**All comments submitted to the Authority during the 2012 review period are addressed and responded to in chapters 10-19 of the Partially Revised Final Program EIR.**

addressed the information in the Partially Revised Draft Program EIR. Other comments addressed the content of the prior program EIRs. Many commenters expressed their views on traffic impacts on the San Francisco Peninsula; how information in the Draft 2012 Business Plan affects the program EIR; and that the Authority should not continue to propose and consider a four-track alignment on the Peninsula, and should instead limit the consideration to only the “Blended System” as proposed by Senator Simitian, Congresswoman Eshoo and Assembly Member Gordon in April of 2011. The comments are included following the text for the Partially Revised Final Program EIR.

#### A. AREAS OF CONTROVERSY

A number of areas of controversy were identified as a result of the 2012 comment process for the Partially Revised Draft Program EIR and were considered in developing the Partially Revised Final Program EIR:

- Adequacy of the level of detail in the environmental analysis for programmatic decision-making process. Refer to Chapter 10, Standard Response 3 of the 2012 Partially Revised Final Program EIR.
- Adequacy of the network and alignment alternatives in light of the “Blended System” approach in the Draft 2012 Business Plan and the need for continued study of a four-track alignment on the San Francisco Peninsula. Refer to Chapters 5 and 10, Standard Response 1, of the 2012 Partially Revised Final Program EIR.
- Selection of a network alternative for connecting the Bay Area to the Central Valley, including choice of mountain crossing, choice of alignments, location of stations, and number of stations directly served. Refer to Chapter 6 of the 2012 Partially Revised Final Program EIR.
- Impacts along the San Francisco Peninsula, including concerns about traffic, noise and vibration, aesthetics, and construction. Refer to Chapters 2, 3, and 4 of the 2012 Partially Revised Final Program EIR.

## 5.2 Range of Alternatives Studied Throughout Program EIR Process

### 5.2.1 Description of HST System

The proposed HST system selected in the 2005 Statewide Program EIR/EIS and further analyzed in the 2008 Bay Area to Central Valley Program EIR/EIS, the 2010 Revised Program EIR, and 2012 Partially Revised Program EIR is electrified steel-wheel-on-steel-rail dedicated service, with a maximum speed of 220 mph (350 kph). A fully grade-separated, access-controlled right-of-way would be constructed and in some areas would share tracks at lower speeds with other compatible passenger rail services. Shared-track operations would use existing rail infrastructure in areas where construction of new separate HST facilities would not be feasible. Although shared service would reduce the flexibility and capacity of HST service because of the need to coordinate schedules, it would also result in fewer environmental impacts and a lower construction cost.

### 5.2.2 Identification of Bay Area to Central Valley Alignment Alternatives and Station Location Options

Informed by previous studies and the scoping process, the Authority and the FRA evaluated potential HST Alignment Alternatives in the study region and defined those that best meet the project purpose (refer to Section 2.1 of this report), which is *to provide a reliable high-speed electrified train system that links the major Bay Area cities to the Central Valley, Sacramento, and Southern California, and that delivers predictable and consistent travel times. Further objectives are to provide interfaces between the HST system and major commercial airports, mass transit and the highway network and to relieve capacity constraints of the existing transportation system in a manner sensitive to and protective of the Bay Area's and California's unique natural resources.* The study region is shown in Figure 1.

## A. SCREENING PROCESS

The Authority and FRA conducted a screening evaluation to identify potential alignment alternatives and station location options that are anticipated to be practicable, reasonable, and feasible for further consideration in the program environmental process. Refer to Section 2.5.1 in the 2008 Final Program EIR.

## B. PERFORMANCE CRITERIA

The alignment and station-screening evaluation was combined with public and agency input that together provided the Authority and the FRA with the necessary information to identify a reasonable range of alignment, station location, and HST corridor options. The evaluation of potential HST Alignment Alternatives and station location options within viable corridors used the following categories for criteria: construction, environment, land use compatibility, right-of-way, connectivity/accessibility, and ridership/revenue. Refer to Section 2.5.2 in the 2008 Final Program EIR.

The objectives and criteria, shown in Table 2.5-2 in the 2008 Final Program EIR, used in this evaluation represent further refinement of those used in previous studies and incorporated the HST system performance goals and criteria. Alignment alternatives and station location options were considered and compared based on these established objectives and criteria.

At the screening stage, some alignment alternatives and station location options were considered and removed from further study.

- For most of the alignment alternatives and station location options not carried forward in the program environmental process, failure to meet the general project purpose and objectives and practicability constraints were the primary reasons for elimination.
- Environmental criteria were considered a reason for elimination when an alignment alternative or station location option had considerably more probable environmental impacts than other practicable alignment alternatives or station location options for the same corridor.
- General project purpose and objectives were considered in terms of ridership potential, connectivity and accessibility, incompatibility with existing or planned development, and severe operational constraints.
- Practicability constraints were considered in terms of cost, constructability, right-of-way constraints, and other technical issues. To assess the constructability of tunnels, some specific thresholds were established to help guide the evaluation. Continuous tunnel lengths of more than 12 mi were considered impracticable, and the crossing of major fault zones at grade was also identified as a necessary criterion. For other practicability considerations (e.g., right-of-way constraints, construction issues, costs) thresholds could not be established for this program-level evaluation and impracticability was determined based on professional judgment.

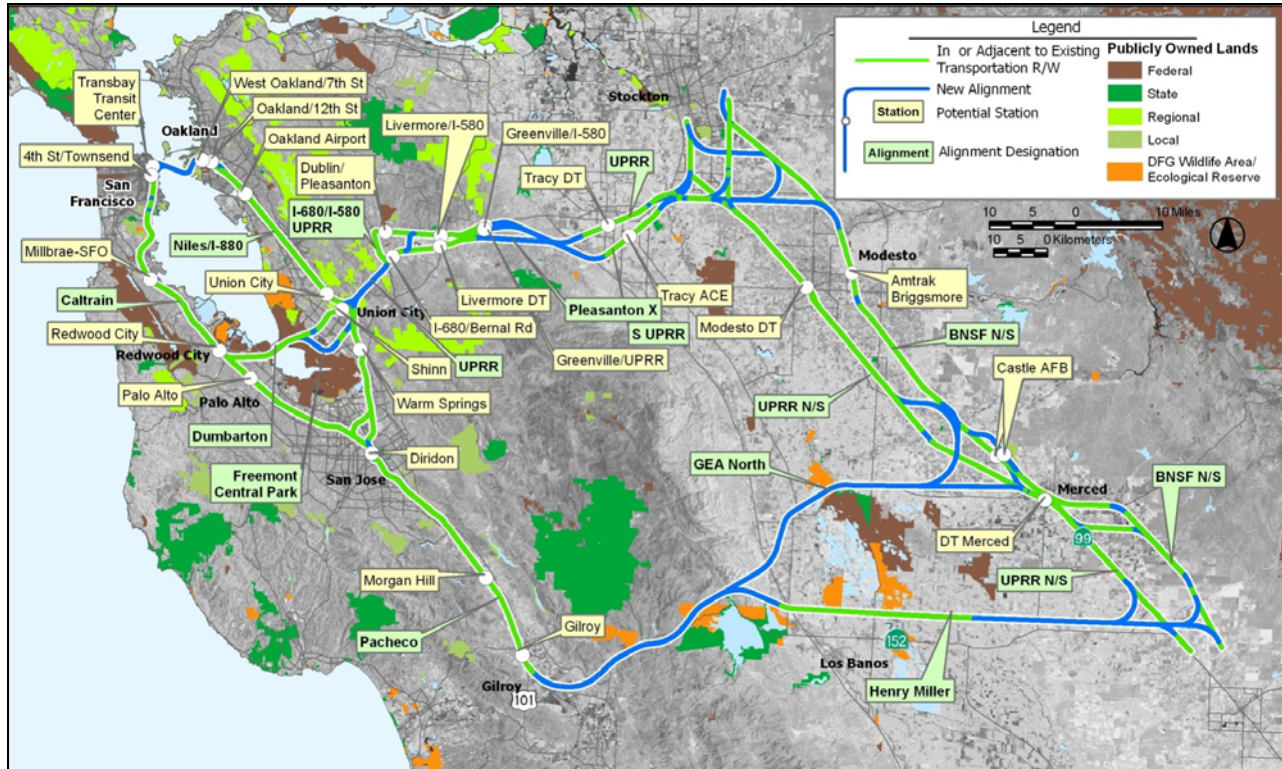
### 5.2.3 Bay Area to Central Valley Alignment Alternatives, Station Location Options, and Network Alternatives Evaluated in the Partially Revised Final Program EIR

#### A. HST ALIGNMENT ALTERNATIVES AND STATION LOCATION OPTIONS

The alignment alternatives and station location options evaluated in the Partially Revised Final Program EIR (which includes the 2008 Final Program EIR and the 2010 Revised Final Program EIR), are shown in Figure 3. To facilitate the analysis of alignment alternatives and station location options in the Program EIR, the study area was divided into six corridors within the study region: San Francisco to San Jose, Oakland to San Jose, San Jose to Central Valley, East Bay to Central Valley, San Francisco Bay Crossings, and Central Valley. Refer to Chapter 2 of the 2008 Final Program EIR and Chapter 2 of the 2010 Revised Final Program EIR for a detailed description of the corridors, HST Alignment Alternatives, and station location options.







**Figure 4. Relationship of Alignments to Major Transportation Facilities**

The station location options shown in Figure 3 were identified generally and represent the most likely sites based on current knowledge, consistent with the objective to serve the state's major population centers. There is a critical tradeoff between accessibility of the system to potential passengers and the resulting HST travel times (i.e., more closely spaced stations will lengthen the travel times for local service as well as express services). The station locations shown here are spaced approximately 50 miles apart in rural areas and 15 miles apart in the metropolitan areas. Additional or more closely spaced stations would negatively affect travel times and the ability to operate both express and local services. Several key factors were considered in identifying potential station stops, including speed, cost, local access times, potential connections with other modes of transportation, ridership potential, and distribution of population and major destinations along the route. The ultimate locations and configurations of stations cannot be determined until the project-level environmental process has been completed.

As part of the development of the *Bay Area Regional Rail Plan*, some HST Alignment Alternatives were considered for regional rail "overlay" services that would be implemented by other transportation agencies in cooperation with the Authority. Overlay services would involve operating regional commuter trains on the HST infrastructure and serving additional non-HST regional rail stations. These regional rail stations and services are not integral to the HST system and are not alternatives in the 2008 Program EIR/EIS; however, they were considered in the 2008 Final Program EIR cumulative analysis of HST Alignment Alternatives as related but separate potential projects.

Conceptual designs were developed for all of the HST Alignment Alternatives and station location options. These designs are illustrated in plan and profile sheets (Appendix 2-D), cross sections (Appendix 2-E), and station fact sheets (Appendix 2-F) of the 2008 Final Program EIR, and in Chapters 2 and 3 of Volume 1 of the 2010 Revised Final Program EIR. Conceptual designs are based on *Engineering Criteria* (Authority and FRA 2004).

In response to the final judgment in the *Town of Atherton* case, Chapter 3 of the Revised Final Program EIR discusses the relationship of the proposed HST alignment alternatives in the Bay Area to Central Valley study area to UPRR freight tracks. Refer to Figure 2, above, which illustrates the alignment alternatives with no proximity to UPRR-owned right-of-way, those assumed to only be adjacent to UPRR-owned right-of-way (due to narrow freight right-of-way), and those that were assumed to have some potential to be either in or adjacent to UPRR-owned right-of-way.

## B. NETWORK ALTERNATIVES

To review and evaluate a HST system in the study region as a part of a statewide system, 21 HST Network Alternatives were identified representing different ways to combine the HST Alignment Alternatives and station location options. Several operating scenarios for combinations of alignment alternatives and terminus stations were investigated, with HST Network Alternatives ranging from one to three termini (San Francisco, Oakland, and San Jose) for direct HST service to the Bay Area. The representative network alternatives, illustrated in Figures 5a through 5c, are grouped into three basic approaches for linking the Bay Area and Central Valley: Altamont Pass (11 network alternatives), Pacheco Pass (6 network alternatives), and Pacheco Pass with Altamont Pass (local service) (4 network alternatives).

The network alternatives were developed to enable an evaluation and comparison of how various combinations of alignment alternatives would meet the project's purpose and need and how each would perform as an HST network (e.g., travel times between various station locations, anticipated ridership, operating and maintenance costs, energy consumption, and auto trip diversions). Representative network alternatives are shown in Table 2.5-1 in Section 2.5 of the 2008 Final Program EIR. Refer to Chapter 7 of the 2008 Final Program EIR and Chapter 6 of the 2010 Revised Final Program EIR.

### 5.2.4 Alignments and Station Locations Considered But Not Studied in Program EIR

Throughout the planning process for the statewide and Bay Area to Central Valley program environmental process a number of HST Alignment Alternatives and station location options were identified and considered but rejected from further consideration. The reasons for elimination of each of the alignments evaluated are summarized in Table 2.5-4 in Chapter 2 and Appendix 2-G in the 2008 Final Program EIR. The alignment alternatives and station options considered and rejected are listed below.

#### San Francisco to San Jose Corridor

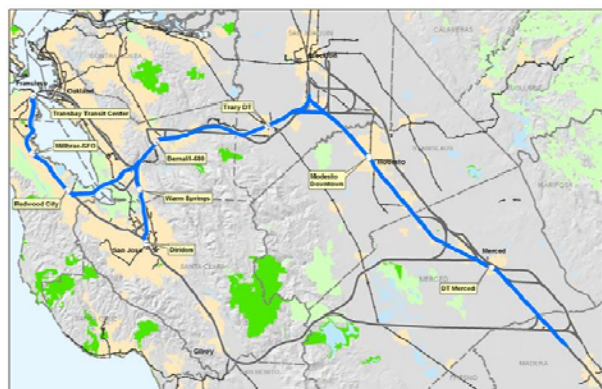
- Alignments: US-101 Alignment (exclusive guideway), Caltrain Corridor (exclusive guideway), I-280 Alignment (exclusive guideway)
- Station Locations: Millbrae–SFO (US-101), Redwood City (US-101), Santa Clara (Caltrain)

#### Oakland to San Jose Corridor

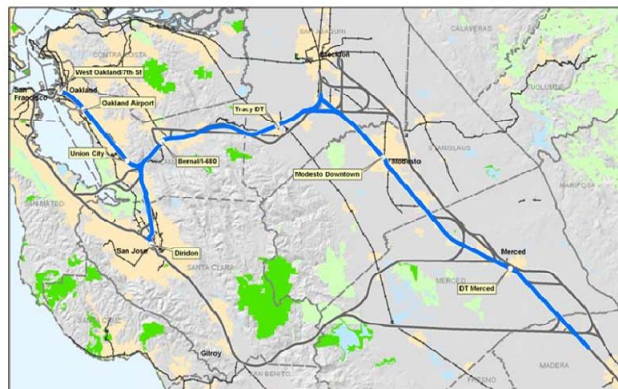
- Alignments: Mulford Line, I-880 (only Oakland to Fremont portion eliminated), Former WPRR Rail Line to Mulford Line (WPRR/Niles/Mulford alignment), Hayward Line via tunnel to Mulford Line (Hayward/Tunnel/Mulford alignment), Former WPRR Rail Line via tunnel to Mulford Line (WPRR/Tunnel/Mulford), Former WPRR Rail Line to Hayward Line to I-880 (WPRR/Hayward/I-880), Former WPRR ( Warm Springs to San Jose), Tunnel under Fremont Central Park
- Station Locations: Lake Merritt, Jack London Square, I-880 Hegenberger, Coliseum BART (WPRR), Mowry Avenue



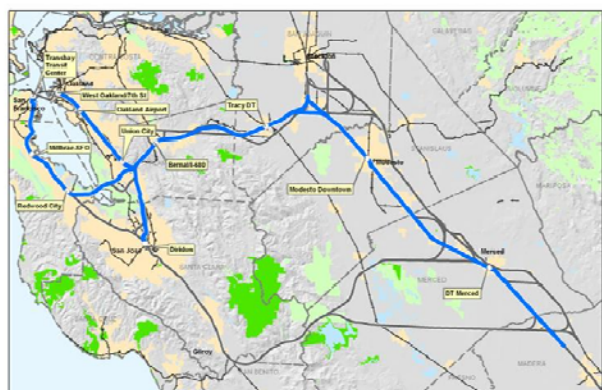
### Figure 5a. Altamont Pass Representative Network Alternatives



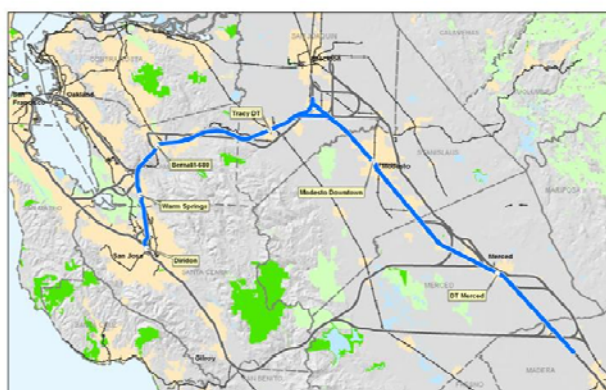
## San Francisco and San Jose Termini



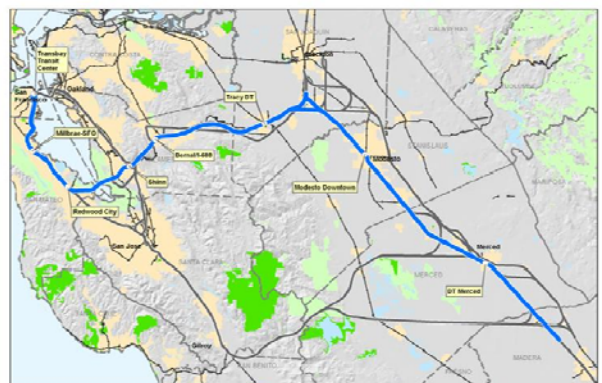
Oakland and San Jose Termini



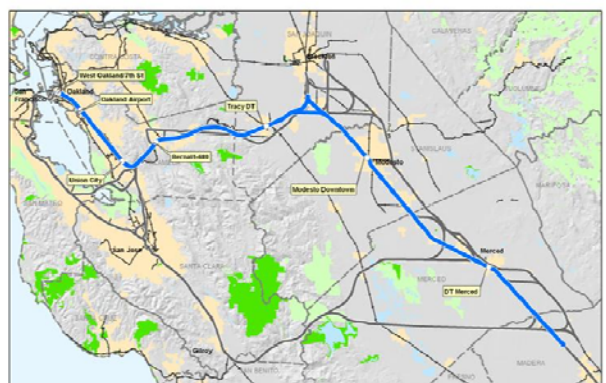
San Francisco, Oakland and San Jose Termini



San Jose Termini



San Francisco Termini

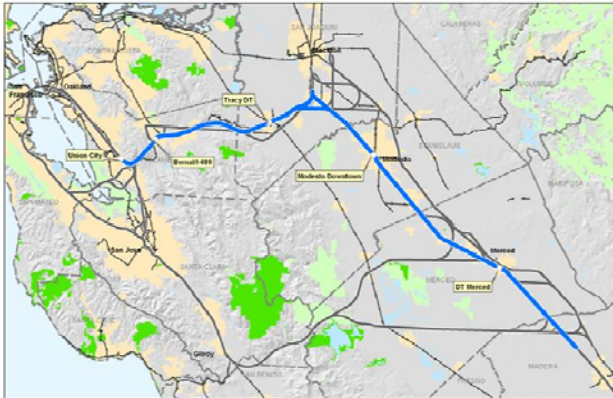


Oakland Termini

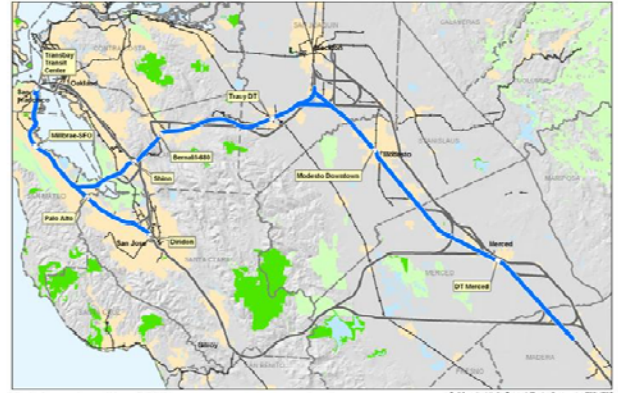




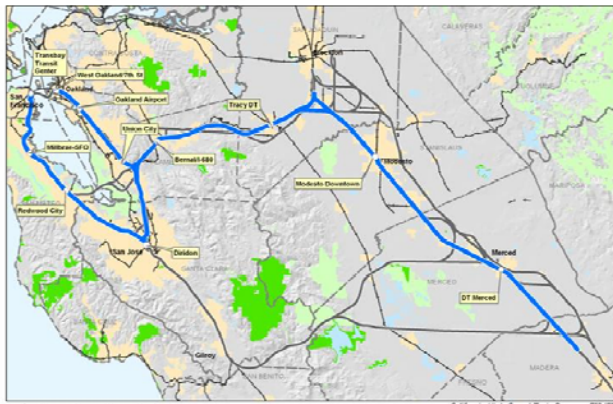
**Figure 5a. Altamont Pass Representative Network Alternatives (cont'd)**



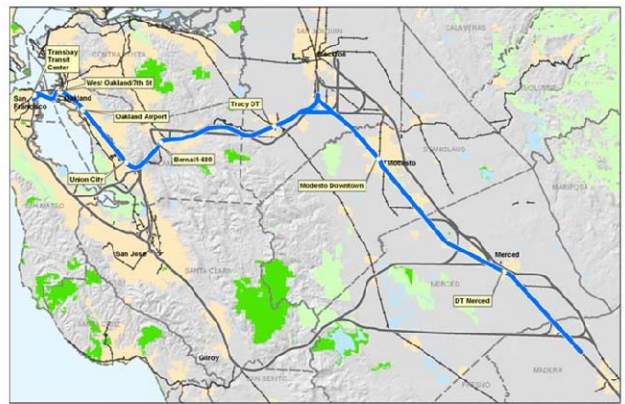
Union City Termini



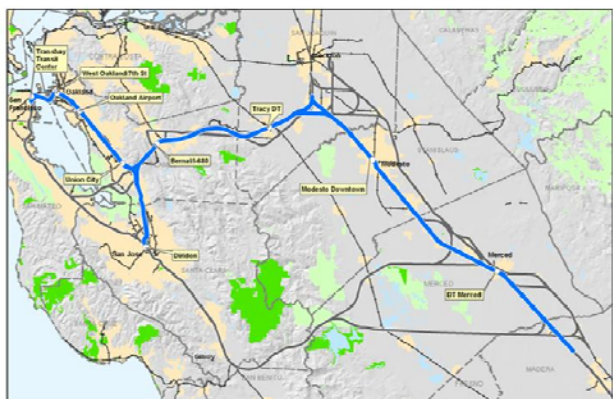
San Francisco and San Jose via SF Peninsula



San Francisco, San Jose and Oakland - no San Francisco Bay Crossing



Oakland and San Francisco via Transbay Tube

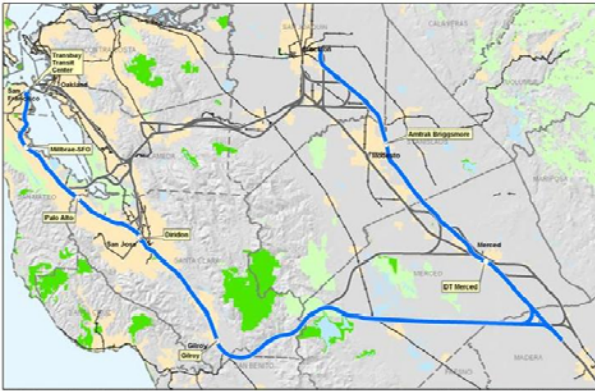


San Jose, Oakland and San Francisco – via Transbay Tube

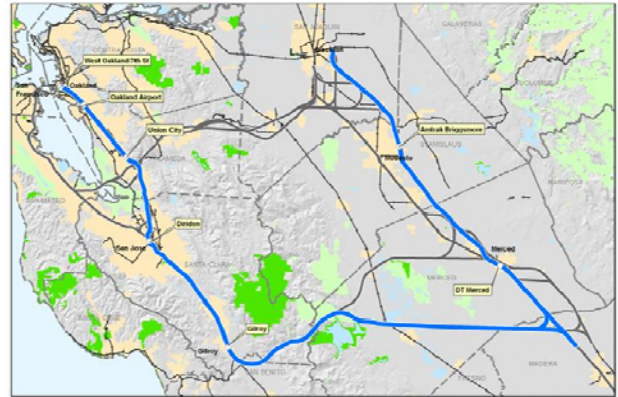




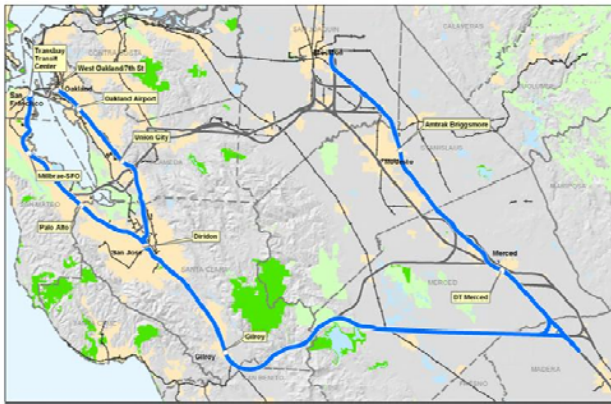
**Figure 5b. Pacheco Pass Representative Network Alternatives**



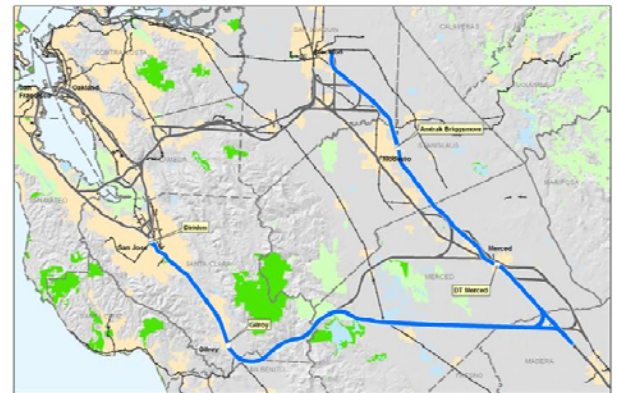
San Francisco and San Jose Termini



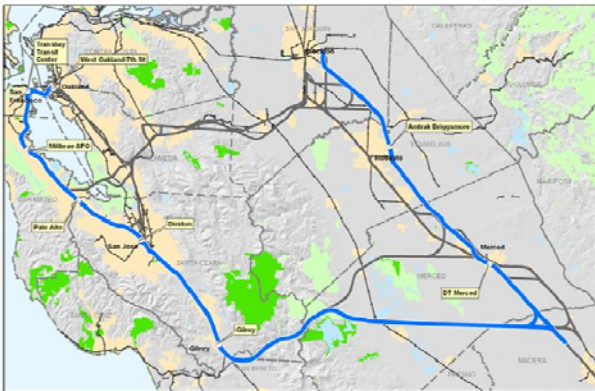
Oakland and San Jose Termini



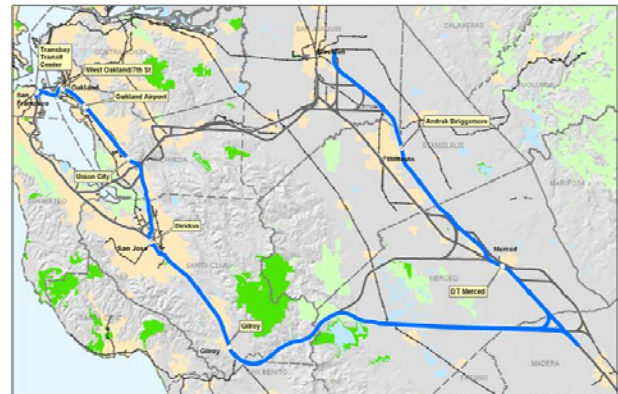
San Francisco, Oakland and San Jose Termini



San Jose Terminus



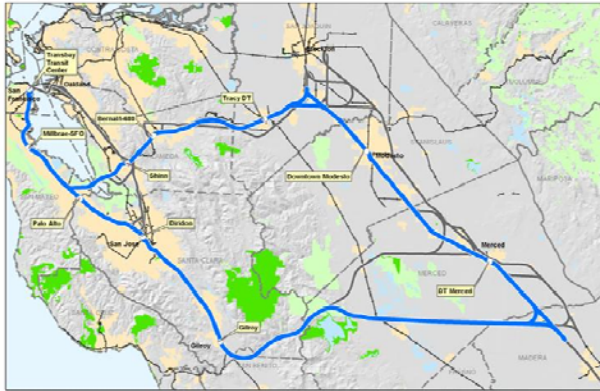
San Jose, San Francisco and Oakland Termini – via Transbay Tube



San Jose, Oakland and San Francisco Termini – via Transbay Tube



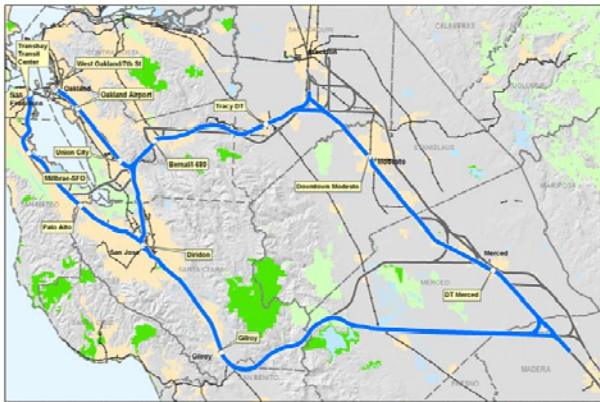
**Figure 5c. Combined Pacheco and Altamont Pass Representative Network Alternatives**



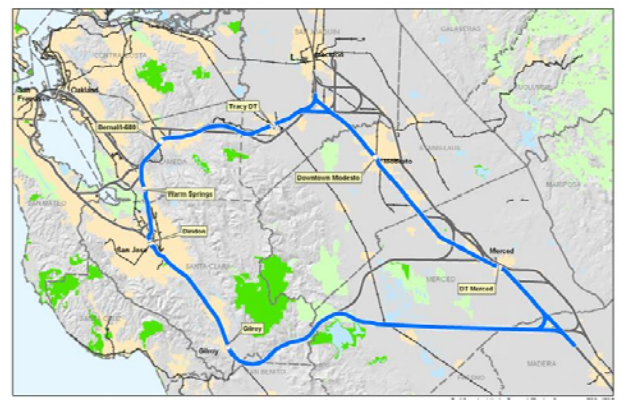
San Francisco and San Jose Termini



Oakland and San Jose Termini



San Francisco, Oakland & San Jose Termini  
(without Dumbarton Bridge)



San Jose Terminus





### San Jose to Central Valley Corridor

- Alignments: Merced Southern alignment (Central Valley Portion of San Jose-Merced section for Diablo Range Direct alignments), Direct Tunnel Alignment (Northern or Southern Connection to Merced), Diablo Range Direct Alignments (Northern Alignment and alignments through Henry Coe State Park), Caltrain/Morgan Hill/Foothill/Pacheco Pass Alignment, Caltrain/Morgan Hill/East US-101/Pacheco Pass Alignment, Caltrain/Morgan Hill/Pacheco Pass Alignment
- Station Locations: Morgan Hill (Foothills), Morgan Hill (east of US-101), Los Banos

### East Bay to Central Valley Corridor

- Alignments: SR-84/South of Livermore, SR-84/I-580/UPRR, I-580: Bay Fair to Pleasanton
- Station Locations: Pleasanton (I-680/SR-84), Livermore (Greenville Rd/SR-84/UPRR), Livermore (Isabel/SR-84)

### Central Valley Corridor

- Alignments: West of SR-99, East of SR-99
- Station Locations: Modesto West, Merced West, Empire, Modesto East, University, Plainsburg

Through the public review process of the 2008, 2010, and 2012 program documents, the Authority received comments suggesting various alternatives be evaluated. These varied in their level of development from a mere sentence (consider a high-speed bus alternative instead) to a thick report (Setec Ferroviaire report). The suggested additional alternatives are discussed in Standard Response 10 and in Chapters 13 through 17 in Volume 2 of the 2010 Revised Final Program EIR and in Chapters 11 through 17, Response to Comments, in the 2012 Partially Revised Final Program EIR. The alternatives identified included:

- An alignment terminating the HST in San Jose
- Altamont alignments and not the Caltrain Corridor
- Use of U.S. 101 north of San Jose
- Use of Interstate 280 north of San Jose
- A proposal to use an Altamont Alignment generally along State Route 84 through the east bay, across the San Francisco Bay, and along the west coast of the San Francisco Bay north of Dumbarton Bridge
- A proposal prepared by Setec Ferroviaire titled, Evaluation of an Alignment for the California High-Speed Rail Project Bay Area to Central Valley Segment, April 25, 2010
- Vertical profile alternatives (primarily below-grade options such as trench or tunnel)
- An operational alternative that would use train splitting and coupling
- Maglev Evacuated Tube Transportation
- A network alternative with a blended approach for the Caltrain Corridor
- An Altamont Corridor Rail Project plus San Francisco/San Jose blended

Overall, the suggested additional alternatives either did not satisfy the project objectives and underlying project purpose, would be infeasible for other reasons, or are similar to alternatives already considered and did not provide any significant reduction in environmental impacts so as to warrant their consideration. In addition the Superior Court has twice concluded that the Authority's range of was reasonable. (The rulings are on the Authority website:  
[http://www.cahighspeedrail.ca.gov/ba\\_cv\\_program\\_eir.aspx](http://www.cahighspeedrail.ca.gov/ba_cv_program_eir.aspx).)

### 5.2.5 Environmental Impacts

Implementing the HST system in the Bay Area to Central Valley study region will result in significant environmental impacts, regardless of which alternative is selected. The decision of how to implement the HST system in the Bay Area to Central Valley study region therefore involves a balancing of different types and degrees of environmental impacts in different locations. HST within the study region will contribute to achieving the distinct benefits of the HST system as a whole, including improved transportation and reduced congestion, improved air quality, energy savings, and greater opportunities for smart-growth land use planning. Refer to Chapters 3 and 5 in the 2008 Final Program EIR, Chapters 2, 3, and 4 in the 2010 Revised Final Program EIR, and Chapters 2, 3, 4, and 5 in the 2012 Partially Revised Final Program EIR.

### 5.2.6 Design Practices and Mitigation Strategies

#### A. DESIGN PRACTICES

Design practices have been and will continue to be applied to the identified HST alignments. Key aspects of the design practices include (i.e., are not limited to) the following:

- Consider vertical profile variations as part of second-tier project planning and environmental review, in consultation with local agencies.
- Minimize impact footprint and associated direct impacts on farmland, parkland, biological, and water resources through maximum use of existing transportation corridors.
- Minimize impact associated with growth effects through the selection of multi-modal transportation hubs for potential HST station locations that would maximize access and connectivity as well as provide efficient (transit-oriented) growth centered on these station locations.
- Minimize impact on farmlands and associated growth through the selection of multi-modal transportation hubs for potential HST station locations that would maximize access and connectivity as well as provide for efficient (transit-oriented) growth centered on these station locations.
- Increase safety and circulation and potentially reduce air pollution and noise impacts, through use of grade separation at road crossings, of considerable portions of adjacent existing services with construction of the planned HST system.
- Pursue agreements with owners/rail operators to place the HST alignment within existing rail rights-of-way, where feasible, to reduce the need for additional right-of-way and minimize potential impacts on agricultural resources and other natural resources.
- Cooperate with regulatory agencies to develop acceptable specific design and construction standards for stream crossings, including (i.e., not limited to) maintaining open surface (bridged versus closed culvert) crossings, infrastructure setbacks, erosion control measures, sediment-controlling excavation/fill practices, and other best management practices.
- Fully line tunnels with impermeable material to prevent infiltration of groundwater or surface waters to the extent possible based on available geologic information and previous tunneling projects in proximity to proposed tunnels.
- Where there is potential for significant barrier effects that could divide wildlife populations or habitat areas or impede wildlife migration corridors, underpasses or overpasses or appropriate passageways will be designed during project-level environmental review for implementation at reasonable intervals during construction to avoid, minimize, or mitigate potential impacts on wildlife movement.



- The potential impacts associated with construction access roads would be greatly limited, and avoided altogether through sensitive areas (as defined at the project level), by using in-line construction (i.e., by using the new rail infrastructure as it is built to transport equipment to and from the construction site and transporting excavated materials away from the construction area to appropriate reuse [e.g., as fill material, aggregate for new concrete] or disposal sites). To avoid creating access roads in sensitive areas (as defined at the project level), necessary geologic exploration would be conducted using helicopter transport for drilling equipment to minimize surface disruption, followed by site restoration on the completion of work.
- HST alignments will be designed so as not to be located on UPRR operating rights-of-way where feasible. HST alignments will be grade separated from UPRR rights-of-way at those locations where HST alignments would need to cross over or under UPRR operating rights-of-way.
- HST alignments will be designed to minimize impacts to existing UPRR business-serving spurs where feasible. The Authority will work with UPRR to identify those locations where design of the HST alignment may affect these business-serving spurs and evaluate with UPRR the following options, and other options that UPRR may present: grade-separate HST alignment (trench, tunnel, or aerial) from the UPRR spur; reconstruct the spur if possible so as to reduce or eliminate the impact of HST operations on existing freight; the Authority will negotiate with UPRR and consider such options as may be suggested by UPRR to accommodate individual freight customer needs.

## B. MITIGATION STRATEGIES

The Partially Revised Final Program EIR (including the 2008 Final Program EIR and 2010 Revised Final Program EIR) identifies general mitigation *strategies* that the Authority and the FRA will consider and refine into specific mitigation *measures* in future project-level CEQA and NEPA environmental documents. This approach is consistent with the concept of tiering. Where, as here, a lead agency is analyzing the environmental impacts of a broad decision at a landscape level, it would be premature to develop precise mitigation *measures*, which will need to be tailored to the type of “on the ground” impacts anticipated for constructing or operating specific portions of the HST system.

The mitigation strategies, along with project design practices (noted above) lay out actions that will be taken to avoid or reduce identified impacts. The strategies were identified to avoid or minimize significant adverse environmental effects. The mitigation strategies identified have been applied to projects throughout the State, country, Europe, and Japan and have been shown to be effective, which is in fact the reason they are included in the Partially Revised Final Program EIR (including the 2008 Final Program EIR and 2010 Revised Final Program EIR). The adopted strategies will be enforceable and capable of being accomplished in a successful manner within a reasonable period of time. As part of the approval of the project and certification of the Partially Revised Final Program EIR, these strategies are included in the mitigation monitoring and reporting plan (MMRP) to be adopted by the Authority Board. Once adopted, the MMRP will be enforceable under CEQA, committing the Authority to these strategies as they may be refined and applied at the next tier.

Detailed site-specific mitigation measures can and will be defined during the project-level EIR/EIS phase, following more detailed preliminary engineering and field reviews focused on the alternative selected at the program level. The mitigation strategies will be used to develop appropriate mitigation measures to address site-specific impacts identified at the project level.

For instance, use of noise walls is a mitigation strategy for noise impacts. The appropriate locations, lengths, height, and design of these walls will be defined during the preliminary engineering and project-level environmental review, when detailed field studies are performed. This example applies to all mitigation strategies in the Partially Revised Final Program EIR (including the 2008 Final Program EIR and 2010 Revised Final Program EIR), and is fully consistent with typical project

planning and the environmental review requirements. Mitigation measures are refined as the planning and engineering progress from the conceptual to preliminary to final project design phases. For example, the exact location, length, and materials used for noise walls may change even between preliminary and final design.

As the planning and engineering process progresses, and as project elements are more precisely defined, further review of project impacts occurs to ensure that impacts are still being mitigated to the extent feasible and that no new significant impacts are introduced. Environmental laws and implementing requirements prescribe the procedures to be followed should new significant impacts be revealed.

## 6 PREFERRED NETWORK ALTERNATIVE, ALIGNMENTS, AND STATION LOCATIONS

Analyses in Chapter 8 of the 2008 Final Program EIR, Chapter 7 of the Revised Final Program EIR, and Chapter 6 of the 2012 Partially Revised Final Program EIR all concluded that the Pacheco Pass Network Alternative serving San Francisco via San Jose was the preferred alternative for connecting the Bay Area with the Central Valley as part of the statewide HST system. Table 1 lists the preferred corridors, alignments, and station locations and are described in Section 6.3.6 in the 2012 Partially Revised Final Program EIR.

**For a detailed description of the Preferred Alternative: Pacheco Pass Network Alternative Serving San Francisco via San Jose, please refer to Chapter 6 of the 2012 Partially Revised Final Program EIR.**

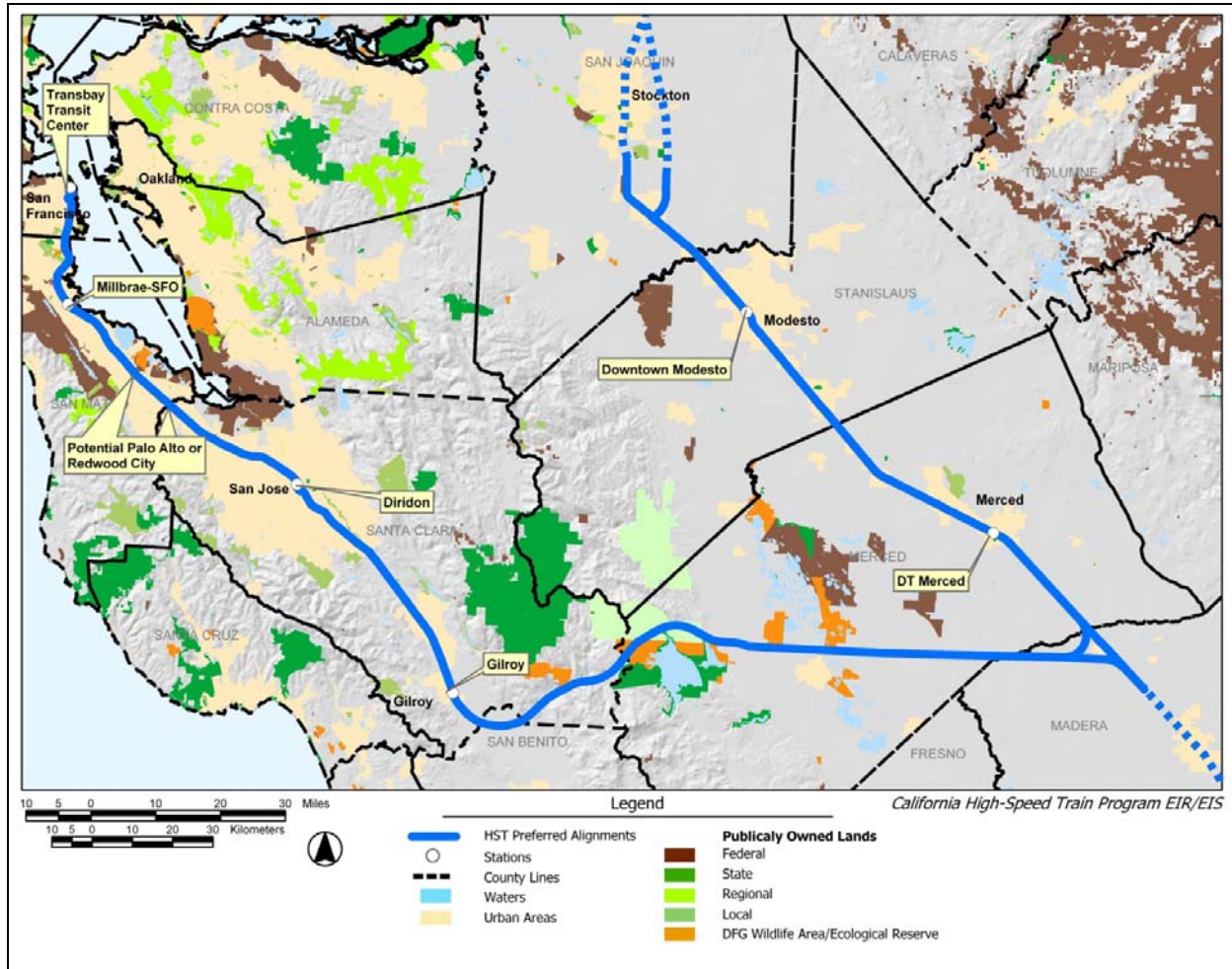
**Table 1. Preferred Alternative: Pacheco Pass Network Alternative Serving San Francisco via San Jose**

Corridor	Alignment	Stations
San Francisco to San Jose Corridor	Caltrain Corridor (shared use)	<ul style="list-style-type: none"> <li>San Francisco/Transbay Transit Center</li> <li>Millbrae</li> <li>Potential Palo Alto or Redwood City<sup>3</sup></li> </ul>
San Jose to Central Valley Corridor	Pacheco Pass via Henry Miller Rd	<ul style="list-style-type: none"> <li>San Jose/Diridon Station</li> <li>Gilroy Station (Caltrain)</li> </ul>
Central Valley Corridor	UPRR N/S, but continue to study BNSF	<ul style="list-style-type: none"> <li>Downtown Modesto</li> <li>Downtown Merced</li> </ul>

*The 2008 Final Program EIR identified a preferred location for a maintenance facility in Merced (Castle Air Force Base) and explained that the preferred alternative would involve no San Francisco Bay crossing.*

Different system characteristics, as well as environmental factors, of the network alternatives have been examined in the program EIR. Chapter 6 of the 2012 Partially Revised Final Program EIR describes the preferred HST Network Alternative and alignments and station options as well as the evaluation of Network Alternatives that supported the identification of the preferred alternative, shown in Figure 6.

<sup>3</sup> The City of Palo Alto sent a letter dated November 9, 2010, to the Authority opposing the consideration of a HST station anywhere in Palo Alto. The City of Redwood City and the Redwood City Chamber of Commerce have previously indicated support for the Redwood City station location option. As part of future project-level studies the Authority should continue to investigate potential sites and work with local agencies and the Caltrain JPB to determine whether a Mid-Peninsula station site should be recommended.



**Figure 6. Preferred Alternative Identified in the Partially Revised Final Program EIR**

Chapter 6 of the 2012 Partially Revised Program EIR describes the evaluation criteria for determining a preferred network alternative; the public and agency support for the different Pacheco and Altamont network alternatives, as well as the Pacheco with Altamont (local service) network alternatives; a summary of the Pacheco, Altamont, and Pacheco with Altamont (local service) alternatives; a comparison of the network alternatives for public support, ridership and revenue, capital and operating costs, travel times and conditions, constructability and logical constraints, and environmental impacts. The reasons identified for selecting the Pacheco Pass alternative serving San Francisco via San Jose as preferred included the following:

- The Pacheco Pass minimizes impacts on wetlands, waterbodies, and the environment.
- The Pacheco Pass best serves the connection between Northern and Southern California.
- The Pacheco Pass best utilizes an existing, publicly owned rail corridor with potential for track sharing.
- The Pacheco Pass is still supported by the Bay Area region.
- The Pacheco Pass has the fewest impacts to communities because it makes the best use of available rail and transportation rights-of-way.

The 2012 Partially Revised Final Program EIR (Chapter 6) also provides additional information developed as part of the 2010 and 2012 analyses that was considered in recommending the preferred Network Alternative including a clarification of the location of the HST alignment alternative between San Jose and Gilroy; effect of UPRR denying use of its right-of-way; effect of avoiding impacts to UPRR freight operations; clarification and revision of noise and vibration, traffic, and construction impacts along Monterey Highway and in certain portions of the San Francisco Peninsula; and new information, like the Draft 2012 Business Plan and Revised 2012 Business Plan, and changed conditions.

## **6.1 Federal Least Environmentally Damaging Practicable Alternative, NEPA Environmentally Preferable Alternative, and CEQA Environmentally Superior Alternative**

The U.S. Environmental Protection Agency (USEPA) and the USACE have participated in the development of both the 2007 Draft and 2008 Final Program EIR and, in accordance with the June 12, 2006, Interagency Memorandum of Understanding among federal agencies and the Authority for the programmatic, or Tier 1, environmental review, were consulted concerning the selection of the corridor and alignments most likely to yield the LEDPA. The USEPA and USACE concurred that the Preferred Pacheco Pass Network Alternative serving San Francisco via San Jose described above is most likely to yield the LEDPA.

In addition, the Authority and FRA have identified the Preferred Pacheco Pass Network HST Alternative described above as the environmentally preferable under NEPA and environmentally superior under CEQA.

## **7 NEXT STEPS**

Provided the Authority certifies the Partially Revised Final Program EIR and makes findings for compliance with CEQA, the Authority and FRA would focus future project analysis in the study region on alignment and station location options selected through this program environmental process. Site-specific location and design alternatives for the preferred alignment and station location options, including avoidance and minimization alternatives, would be fully investigated and considered during Tier-2, project-level environmental review.

Preliminary engineering and project-level environmental review would assess site-specific issues and potential environmental impacts not already addressed in the Partially Revised Final Program EIR. Project-level environmental review would focus on a portion or portions of the proposed HST system and would provide further analysis of potential impacts and mitigation at an appropriate site-specific level of detail to obtain needed permits and to implement HST projects. Also, the Authority would work with local governments, transportation agencies, and private parties to identify right-of-way preservation needs and protective advance acquisition opportunities consistent with state and federal authority requirements.

### **7.1 Contact**

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